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(54) **Encapsulated self adhering acoustic mat for sandwich used in vehicle interior systems**

(57) A reinforcing mat for use in vehicle trim panels, such as a headliner or roof liner, comprising a fiber layer, first and second polymer layers on each side of the fiber layer encapsulating the fibers and an adhesive layer on at least one outer surface of the first and second polymer layers. The resulting mat is perforated or apertured in either a random or non-random fashion to provide an open mat. A method of manufacturing the mat is provided in which the polymer layers are extruded onto the fiber layer and at least one adhesive outer layer is co-extruded with one of the polymer layers. After the polymer and adhesive layers are extruded, the mat is perforated either by a punch roller or a vacuum roller which displaces the polymer and adhesive from the spaces between the fibers.

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EUROPEAN SEARCH REPORT

Application Number
EP 99 12 2709

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	GB 2 063 155 A (LIGNOTOCK VERFAHRENSTECH) 3 June 1981 (1981-06-03) * claim 1 * -----	1,14,16,22	B32B27/12 B32B7/12 B32B3/24 B32B31/30 B60R13/02
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B60R B32B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 31 May 2000	Examiner Stinchcombe, J
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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ON EUROPEAN PATENT APPLICATION NO.**

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31-05-2000

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2063155 A	03-06-1981	DE 2945977 A	21-05-1981
		DE 2946969 A	21-05-1981
		AT 379106 B	25-11-1985
		AT 509080 A	15-04-1985
		BR 8007345 A	26-05-1981
		CA 1164779 A	03-04-1984
		ES 488731 A	16-09-1980
		FR 2469498 A	22-05-1981
		IT 1126949 B	21-05-1986
		JP 1275712 C	31-07-1985
		JP 56085455 A	11-07-1981
		JP 60001424 B	14-01-1985
		NL 8005799 A	01-06-1981
		SE 451691 B	26-10-1987
		SE 8007189 A	13-05-1981

EPO FORM P0439

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82